REPORT

Second Quarter Vapor Intrusion Investigation Report North Bronson Industrial Area Operable Unit 1 Bronson, Michigan

NBIA OUI PRP Group

September 2008

O'BRIEN & GERE

Job No. 12716 / 41686

REPORT

Second Quarter Vapor Intrusion Investigation Report
North Bronson Industrial Area
Operable Unit 1
Bronson, Michigan

NBIA OUI PRP Group

Scott L. Cormier, PE
Vice President
Michigan PE # 39613

September 2008

O'BRIEN & GERE

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1.0. Introduction

The North Bronson Industrial Area (NBIA) Site Operable Unit 1 (OU1) Potentially Responsible Parties (PRP Group) retained O'Brien & Gere to implement the Vapor Intrusion Work Plan (O'Brien & Gere, 2007) for OU1 at the NBIA Site. This Work Plan was approved by the United States Environmental Protection Agency (USEPA) via letter dated September 4, 2007, and was subsequently modified in accordance with correspondence between the PRP Group and USEPA dated January 16, 2008. The work completed during this portion of the Vapor Intrusion Study was conducted in accordance with the approved Work Plan, except as noted in this report.

1.1. Purpose and objectives

The purpose of the Vapor Intrusion Study is to aid in evaluating the vapor intrusion potential that may be attributable to NBIA OU1 impacted ground water, with the goal of identifying whether nearby residential, commercial, or industrial structures may be affected by vapor intrusion. The purpose of this report is to communicate the activities associated with the second quarter of the four-quarter program of soil vapor sampling, laboratory analysis, and data management. Descriptions of the site, site background, geology and hydrogeology, and ground water flow and quality characteristics were provided in the Work Plan. Further discussion of these topics is provided in this report only to the extent they pertain to the soil vapor sampling activities described herein.

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2.0. Soil vapor program activities

The objective of this task was to evaluate the potential presence of constituents of concern (COCs) in soil vapor proximal to the Western Lagoon Area (WLA). To accomplish this objective, discrete subsurface soil vapor samples were collected for laboratory analysis of select volatile organic compounds (VOCs) from five soil vapor probe locations (*i.e.*, SG-8 through SG-12), as shown in Figure 2. These probes were installed just prior to the first quarter sampling event, and the soil boring logs and well construction details were presented in the First Quarter Vapor Intrusion Investigation Report (O'Brien & Gere, June 2008).

The vapor probe locations provide information regarding the potential presence of soil vapor migration in the vicinity of the WLA to the east, south, and west and are designed to identify the potential for soil vapor intrusion in the event that structures would be built near the lagoon area. County Drain #30 forms the northern perimeter of the WLA, and this incised drainageway significantly reduces the potential vapor intrusion concerns to the north by truncating the vadose zone in this area.

Soil vapor sampling locations SG-8 and SG-9 (Figure 2) were strategically located between the WLA and the City of Bronson Wastewater Treatment Plant (WWTP) near the alignment of the city storm sewer that could potentially act as a preferential pathway for soil vapor migration. Compared to sampling adjacent to the WWTP, the selected locations of SG-8 and SG-9 were intended to provide more definitive information regarding the potential for soil vapors originating at the WLA to impact the main building of the WWTP. The WWTP is generally upgradient of the WLA and at a distance of at least 300 feet (Figure 2).

The following sections provide a brief summary of the activities conducted during the second quarter of the soil vapor program. A more detailed description of the procedures used during the implementation of the soil vapor program is provided in the Section A5 (Sampling Procedure Plan) of the Field Sampling and Quality Assurance Plan, Revision 2, Addendum 1 (FSQAP Addendum 1), which is included as Appendix A to the Work Plan.

The soil vapor sampling program was conducted in accordance with the Health and Safety Plan, Addendum 1, contained in Appendix B of the Work Plan. The second quarter soil vapor sampling event was completed on July 24, 2008.

2.1. Soil Vapor probe sampling

Discrete samples of soil vapor were collected from the soil vapor probes. Prior to the collection of the soil vapor samples, the sampling tubing was purged of ambient air. A minimum of one and a maximum of three volumes of air within the sample probe and tubing were purged prior to sample collection. In addition, helium tracer gas screening was used during sampling of the five soil vapor probes to evaluate the adequacy of the sampling technique and identify potential short-circuiting from the ground surface during sample collection. The tracer gas screening and soil vapor probe sampling procedures implemented during this sampling event were consistent with the procedures provided in the Work Plan. A Dielectric Technologies Model MGD-2002 helium detector was used to screen the extracted vapor stream for helium. This detector is more sensitive than the Mark Helium Model 9822 detector specified in the Work Plan, with a sensitivity of 25 parts per million by volume (ppmv); therefore, it meets the "or equivalent" requirement of the Work Plan. No short-circuiting was

observed in soil vapor probes SG-8, and SG-10 through SG-12 during the initial screening; therefore, these vapor probes passed this screening test, and soil vapor samples were then collected over a four-hour period at each of these locations in accordance with the Work Plan.

However, short-circuiting was observed in soil vapor probe SG-9 during the initial screening; therefore, the soils below the interior of the flush-mounted well protector were removed to 1.5 ft below grade and replaced with hydrated granular bentonite to seal the soil vapor probe. Helium was still observed in the purge air, but was considered to be residual helium from the initial short-circuiting test. Therefore, a soil vapor sample was collected over a four-hour period at SG-9.

The soil vapor samples were submitted under routine chain-of-custody protocols to TestAmerica of Burlington, Vermont, which is a National Environmental Laboratory Accreditation Conference (NELAC) certified laboratory for analysis of the COCs (*i.e.*, trichloroethene [TCE], cis-1,2-dichoroethene, trans-1,2-dichoroethene, and vinyl chloride) by USEPA Method TO-15. Quality assurance/quality control (QA/QC) measures were implemented during the field sampling activities including documentation of sample container vacuum/pressure before and after sample collection, chain-of-custody protocols, field (or equipment) blanks accompanying empty SUMMA canisters to the field and filled sample containers back to the laboratory, and the collection of a field duplicate sample.

2.2. Sampling documentation

The collection of soil vapor samples was documented on soil vapor sample collection field forms contained in Appendix A. The collection, transfer of custody, and shipping of the samples to the analytical laboratory were documented using chain-of-custody forms contained in Appendix B, along with the analytical reports for the second quarterly sample event.

2.3. Validation, management, and evaluation

The analytical data generated during the second quarterly sampling event were validated, and the usability of the data for assessing the extent of COCs was assessed. The data validation report for the second quarterly sampling event is contained in Appendix C.

Data management procedures were established to effectively process the data generated during the investigation such that the relevant data descriptions (sample numbers, methods, procedures) are readily accessible and accurately maintained. Data were collected and recorded in a variety of ways during the sampling program. These included utilizing standard field forms, field notebooks, and laboratory generated data. The original forms and data are maintained in O'Brien & Gere's files. Data amenable to computerization, such as analytical data, were input to a data storage system.

3.0. Findings

The information obtained from the activities described in Section 2 is presented in the following section. Information supporting the observations and findings presented in this report is provided in the table, figures, and appendices of this report.

3.1. Field observations

FID readings of 0 ppmv were recorded at each of the soil vapor probes during the purging (see Appendix A). No significant olfactory observations were recognized during sampling.

Short-circuiting was observed in soil vapor probe SG-9 during the initial screening and at the completion of sampling with helium concentrations of 2,500 ppmv and 250 ppmv, respectively. Short-circuiting was also observed post sampling at SG-8 with helium concentrations of 3,600 ppmv, but was not observed during the initial screening. Soil vapor probes SG-8, SG-10 through SG-12 will be re-sealed using the procedure used at SG-9 prior to sampling during the next sampling event as a corrective measure.

3.2. Soil vapor results

The analytical results for soil vapor samples collected during the second quarterly sampling event are presented in Table 1. The analytical laboratory report for this sampling event is contained in Appendix B. TCE, cis-1,2-dichoroethene, and vinyl chloride were the only COC detected during this sampling event. TCE was detected in the soil vapor samples at concentrations ranging from 4.9 micrograms per cubic meter ($\mu g/m^3$) at SG-9 to 1,900 $\mu g/m^3$ in the sample from SG-10. Cis-1,2-dichoroethene and vinyl chloride were only detected in the soil vapor samples from SG-9 and the duplicate sample for SG-11 (Dup-2). Cis-1,2-dichoroethene was detected at concentrations of 3.1 $\mu g/m^3$ at SG-9 and 6.3 $\mu g/m^3$ in the sample from SG-11 (Dup-2). Vinyl chloride was detected at concentrations of 1.0 $\mu g/m^3$ at SG-9 and 1.6 $\mu g/m^3$ in the sample from SG-11 (Dup-2). No COCs were detected in the field blank associated with this sampling event. The duplicate sample from SG-11 (Dup-2) was within acceptable relative percent difference (RPD) criteria for TCE, but was greater than the acceptable RPD criteria for the cis-1,2-dichloroethene and vinyl chloride results; therefore, these results were qualified as estimated with a "J" qualifier. The data met the remaining QA/QC criteria set forth in the FSQAP; therefore, no additional data qualifiers were necessary for this data set, and the data set is considered 100% usable (see Appendix C).

3.3. Data evaluation

The second quarter sampling event concentrations were similar to or greater than the first quarter sampling event results. Table 1 also provides the MDEQ Acceptable Soil Gas Screening Concentrations (ASGSCs) for both residential and industrial criteria for both the DEEP 5' and SUB-SLAB exposure scenarios. The TCE concentrations measured at all five soil vapor probes around the WLA are below the industrial criteria for both exposure scenarios and below the residential DEEP 5' criteria. The TCE results at SG-8, SG-10 and SG-12, located just east, south and west respectively of the WLA, exceeded the residential SUB-SLAB scenario ASGSC of 700 $\mu g/m^3$ with concentrations of 910 $\mu g/m^3$, 1,900 $\mu g/m^3$ and 1,600 $\mu g/m^3$, respectively.

The existing vapor probes will be re-sampled during the next sampling event currently scheduled to occur in October 2008 to evaluate whether transient and environmental influences significantly affect subsurface COC concentrations.

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4.0. References

ARCADIS Geraghty & Miller, Inc. (ARCADIS). 2002a. *Draft Phase II Pre-Design Studies Technical Memorandum.* North Bronson Industrial Area. Operable Unit 1. December 4, 2002.

ARCADIS. 2002b. *Pre-Design Studies Report (Revision 2).* North Bronson Industrial Area. Operable Unit 1. March 5, 2002.

ARCADIS. 2005. *Groundwater Quality Investigation Technical Memorandum.* North Bronson Industrial Area. Operable Unit 1. April 13, 2005.

MDEQ. 1998. *Part 201 Generic Ground Water and Soil Volatilization to Indoor Air Inhalation Criteria: Technical Support Document.* Environmental Response Division. August 31, 1998.

MDEQ. 2006. *Peer Draft Review Operational Memorandum No. 4, Attachment 4 – Soil Gas and Indoor Air.* Remediation and Redevelopment Division (RRD). February, 2006.

O'Brien & Gere. 2007. *Vapor Intrusion Work Plan.* North Bronson Industrial Area. Operable Unit 1. August, 2007.

O'Brien & Gere. 2008. *First Quarter Vapor Intrusion Investigation Report.* North Bronson Industrial Area. Operable Unit 1. June, 2008.

USEPA. 1998. *EPA Superfund Record of Decision (EPA/ROD/R05-98/024).* North Bronson Industrial Area. EPA ID: MID005480900. OU 01. Bronson, Michigan. June 19, 1998.

USEPA. 1999. *North Bronson Industrial Area Site Consent Decree.* March 12, 1999.

USEPA. 2002. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils.* Office of Solid Waste and Emergency Response. Washington, D.C. USEPA 530-F-02-052.

TABLES

Table 1
Soil Vapor Sample Results
Western Lagoon Area
North Bronson Industrial Area Site

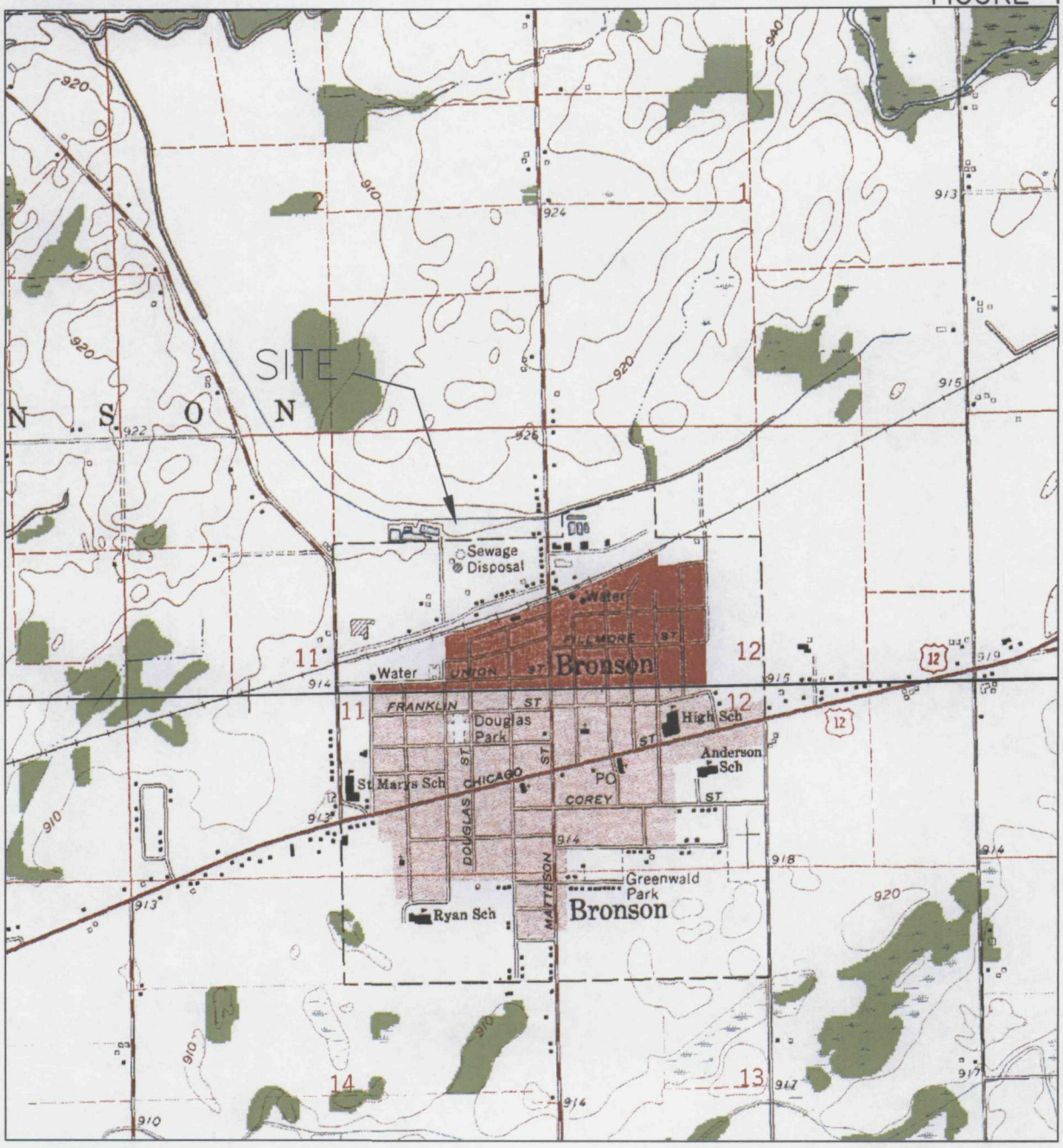
Sample Location	Depth Interval (ft-bgs)	Date of Sampling	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl Chloride
DEEP 5' Residential ASGSCs			18,000	37,000	7,000	2,800
SUB-SLAB Residential ASGSCs			1,800	3,700	700	280
DEEP 5' Industrial ASGSCs			26,000	50,000	29,000	12,000
SUB-SLAB Industrial ASGSCs			2,600	5,000	2,900	1,200
SG-8	2.8 to 3.3	Apr-08	2.0 U	2.0 U	**400**	1.3 U
		Jul-08	4.0 U	4.0 U	***910***	2.6 U
SG-9	2.5 to 3.0	Apr-08	0.79 U	0.79 U	**1.7**	0.51 U
		Jul-08	**3.1**	0.79 U	**4.9**	**1.0**
SG-10	2.5 to 3.0	Apr-08	4.4 U	4.4 U	***1,100***	2.8 U
		Jul-08	7.9 U	7.9 U	***1,900***	5.1 U
SG-11	2.5 to 3.0	Apr-08	0.79 U	0.79 U	**46**	0.51 U
		Jul-08	0.79 UJ	0.79 U	**64**	0.51 UJ
		Jul-08 (Dup)	**6.3 J**	0.79 U	**64**	**1.6 J**
SG-12	2.5 to 3.0	Apr-08	5.2 U	5.2 U	***1,100***	3.3 U
		Apr-08 (Dup)	4.8 U	4.8 U	***1,200***	3.1 U
		Jul-08	7.9 U	7.9 U	***1,600***	5.1 U
Field Blank	NA	Apr-08	0.79 U	0.79 U	1.1 U	0.51 U
		Jul-08	0.79 U	0.79 U	1.1 U	0.51 U

Notes:

1. *See laboratory data reports for analytical methods and quality control data.*
2. *All concentrations reported in units of ug/m^3.*
3. *For clarity, all detections are shown in* ***bold-face type****.*
4. *Concentrations exceeding the SUB-SLAB Residential ASGSCs are italicized. Source: MDEQ. 2006. Peer Draft Review Operational Memorandum No. 4, Attachment 4 - Soil Gas and Indoor Air - Appendix D. Remediation and Redevelopment Division. February 2006.*
5. *Organic data qualifiers:*
   U - not detected at indicated detection limit.
   J - concentration qualified as estimated.

FIGURES

FIGURE 1



ADAPTED FROM: BRONSON NORTH AND BRONSON SOUTH, MICHIGAN U.S.G.S 7.5 MIN QUAD

QUADRANGLE LOCATION

NORTH BRONSON INDUSTRIAL AREA

BRONSON, MICHIGAN

SITE LOCATION MAP

1 0 1/2 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

FILE NO. 12716.38091

JUNE 2006

SCALE: 1:24000

O'BRIEN & GERE ENGINEERS INC.

PLOT DATE: 1/19/06 EDISON AMM

I:\EDISON\PROJECTS\12716 NBIA OU1 PRP GROUP\39261\DWGS\USGS.DWG

PATH: I:\Projects\NBIA 12716\41686\DWGS\SITE LAYOUT AUG 2007.DWG

PLOT DATE: 6/9/08 FARM HILLS CSY

FIGURE 2

WESTERN LAGOON AREA

BRONSON STORM SEWER OUTFALL

FARM OUTFALL

OF5

OF4

OF3

BRONSON WASTEWATER TREATMENT PLANT OUTFALL

MW-28

MW-6S

MW-33S/I

SG-1R

MW-8S/D

SG-12

MW-32S/I

MW-7S

MW-29

MW-31

MW-36

SG-4

SG-3

SG-8

SUBSTATI

MW-26

MW-30

SG-9

SG-10

SG-11

MW-9S

WATER TREATMENT PLANT

PZ5

PZ7 S/D

NOTES:
1. SITE LAYOUT AND EXISTING SAMPLING LOCATIONS BASED ON ARCADIS SITE LAYOUT, ARCADIS, MARCH 3, 2005, PROJ. NO. SF 002075.001

2. LOCATION OF "INDUSTRIAL SEWER" IS APPROXIMATE AND BASED ON FIGURE 2 OF THE CONSENT DECREE STATEMENT OF WORK.

LEGEND

- APPROXIMATE SITE BOUNDARY
- STAFF GAUGE
- PRE-RI
- RI
- PRE-DESIGN MW
- MONITORING WELL -BRONSON PRECISION PRODUCT
- MONITORING WELL - HALEY AND ALDRICH
- PIEZOMETER LOCATION AND NUMBER
- PRIVATE WELL LOCATION
- OUTFALL LOCATION AND NUMBER
- SURFACE-WATER FLOW DIRECTION
- GENERAL GROUND WATER FLOW DIRECTION
- SOIL GAS SAMPLE LOCATION (SG)
- RESIDENTIAL STRUCTURE WITHIN EASTERN LAGOON AREA STUDY AREA
- APPROXIMATE INDUSTRIAL SEWER

NORTH BRONSON INDUSTRIAL AREA SITE OPERABLE UNIT 1 BRONSON, MICHIGAN

SOIL GAS (VAPOR) SAMPLING LOCATIONS

1"=60' 60 0 60

FILE NO. 12716.41686
JUNE 2008

O'BRIEN & GERE ENGINEERS, INC.

APPENDICES

APPENDIX A

Soil Vapor Sample Collection Field Forms

O'BRIEN & GERE

Soil Vapor (Canister) Sample Collection Field Form

Project #	41686.001.002	Date	7/24/08
Project Name	NBIA VI Study	Collector	KBS / CSY

Sample ID	SG- 8	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	7/24/08 7:55	Start Pressure ("Hg)	-30.0
End Date/Time	7/24/08 12:05	End Pressure ("Hg)	-4.5
Canister ID	4802	End pressure > "zero"?	Yes
Flow controller ID	2839	Sampling duration (intended)	4 hours
Associated ambient air sample ID	N/A	Depth of sample point below grade	2.8 - 3.3
Analytical method required	TO-15	Laboratory used	TestAmerica Burlington

Tubing type used: Teflon Length of tubing: 7 ft cm Tubing volume: _____ cc

Volume purged: _____ cc @ 0.1 l/min (100cc/min) 1 to 3 volumes purged @ < 200cc/min? Yes

Chamber tracer gas conc.: 99.1% / 92.4% Tracer gas conc. during purging: 0% / 3600 ppm

Gas Analyzer Readings: %O_2 N/A %CO_2 N/A %CH_4 N/A PID/FID reading: 0/0 (ppmv)

Noticeable odor: No Soil type: _____

Weather Conditions during Probe Installation:

Air temperature (°F): _____ Rainfall: _____ Wind direction: _____

Barometric pressure: _____ Wind speed (mph): _____

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

_____

_____

Weather Conditions at Start of Sampling:

Air temperature (°F): 59° Rainfall: None Wind direction: Calm

Barometric pressure: 30.68 Wind speed (mph): Calm

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

No

_____

_____

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: During final purging short circuiting occurred at a level of 3600 ppm. Resealed probe with bentonite.

_____

_____

O'BRIEN & GERE

Soil Vapor (Canister) Sample Collection Field Form

Project #	41686.001.002	Date	7/24/08
Project Name	NBIA VI Study	Collector	KBS / CSY
Sample ID	SG- 9	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	7/24/08 12:00	Start Pressure ("Hg)	-29.8
End Date/Time	7/24/08 16:45	End Pressure ("Hg)	-13
Canister ID	3275	End pressure > "zero"?	Yes
Flow controller ID	3767	Sampling duration (intended)	4 hours
Associated ambient air sample ID	N/A	Depth of sample point below grade	2.5 - 3.0
Analytical method required	TO-15	Laboratory used	TestAmerica Burlington

Tubing type used: Teflon Length of tubing: 7 ft -em Tubing volume: _____ cc

Volume purged: _____ cc @ 0.1 l/min (100cc/min) 1 to 3 volumes purged @ < 200cc/min? Yes

Chamber tracer gas conc.: 99.3 / 91.4 Tracer gas conc. during purging: 2500 ppm / 250 ppm

Gas Analyzer Readings: %O_2 N/A %CO_2 N/A %CH_4 N/A PID/FID reading: _____ (ppmv)

Noticeable odor: _____ Soil type: _____

Weather Conditions during Probe Installation:

Air temperature (°F): _____ Rainfall: _____ Wind direction: _____

Barometric pressure: _____ Wind speed (mph): _____

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

_____

_____

Weather Conditions at Start of Sampling:

Air temperature (°F): 75° Rainfall: None Wind direction: NNW

Barometric pressure: 30.09 Wind speed (mph): 6.9

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

No

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: During purging detected helium reading of 1.5% removed dirt to 1.5 ft and resealed with bentonite. Repurged and got reading of 2500 ppm which is thought to be residual helium from initial sampling.

O'BRIEN & GERE

Soil Vapor (Canister) Sample Collection Field Form

Project #	41686.001.002	Date	7/24/08
Project Name	NBIA VI Study	Collector	KBS / CSY

Sample ID	SG- 10	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	7/24/08 9:30	Start Pressure ("Hg)	-27.5
End Date/Time	7/24/08 13:30	End Pressure ("Hg)	-3
Canister ID	3290	End pressure > "zero"?	Yes
Flow controller ID	3448	Sampling duration (intended)	4 hours
Associated ambient air sample ID	N/A	Depth of sample point below grade	2.5 - 3.0
Analytical method required	TO-15	Laboratory used	TestAmerica Burlington

Tubing type used: Teflon Length of tubing: 7 ft cm Tubing volume: _____ cc

Volume purged: _____ cc @ 0.1 l/min (100cc/min) 1 to 3 volumes purged @ < 200cc/min? Yes

Chamber tracer gas conc.: 99.5% / 89.5 % Tracer gas conc. during purging: 0% / 0%

Gas Analyzer Readings: %O_2 N/A %CO_2 N/A %CH_4 N/A PID/FID reading: 0/0 (ppmv)

Noticeable odor: _____ Soil type: _____

Weather Conditions during Probe Installation:

Air temperature (°F): _____ Rainfall: _____ Wind direction: _____

Barometric pressure: _____ Wind speed (mph): _____

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Weather Conditions at Start of Sampling:

Air temperature (°F): 68° Rainfall: None Wind direction: Calm

Barometric pressure: 30.09 Wind speed (mph): calm

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

No

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments:

O'BRIEN & GERE

Soil Vapor (Canister) Sample Collection Field Form

Project #	41686.001.002	Date	7/24/08
Project Name	NBIA VI Study	Collector	KBS / CSY

Sample ID	SG-11 / Dup-2	Vacuum gauge "zero" ("Hg)	0 / Dup-2
Start Date/Time	7/24/08 10:03	Start Pressure ("Hg)	-30.0 / -28.5
End Date/Time	7/24/08 14:03	End Pressure ("Hg)	-4 / -6.5
Canister ID	3341 / 3028	End pressure > "zero"?	Yes
Flow controller ID	3046 / 4722	Sampling duration (intended)	4 hours
Associated ambient air sample ID	N/A	Depth of sample point below grade	2.5 - 3.0
Analytical method required	TO-15	Laboratory used	TestAmerica Burlington

Tubing type used: Teflon Length of tubing: 7ft cm Tubing volume: _____ cc

Volume purged: _____ cc @ 0.1 l/min (100cc/min) 1 to 3 volumes purged @ < 200cc/min? Yes

Chamber tracer gas conc.: 99.1 / 82.5 Tracer gas conc. during purging: 0/0

Gas Analyzer Readings: $\%O_2$ N/A $\%CO_2$ N/A $\%CH_4$ N/A PID/FID reading: 0/0 (ppmv)

Noticeable odor: No Soil type: _____

Weather Conditions during Probe Installation:

Air temperature (°F): _____ Rainfall: _____ Wind direction: _____

Barometric pressure: _____ Wind speed (mph): _____

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

_____

_____

Weather Conditions at Start of Sampling:

Air temperature (°F): 70' Rainfall: None Wind direction: Calm

Barometric pressure: 30.16 Wind speed (mph): Calm

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

No

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: _____

O'BRIEN & GERE

Soil Vapor (Canister) Sample Collection Field Form

Project #	41686.001.002	Date	7/24/08
Project Name	NBIA VI Study	Collector	KBS / CSY

Sample ID	SG- 12	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	7/24/08 10:30	Start Pressure ("Hg)	-28
End Date/Time	7/24/08 14:30	End Pressure ("Hg)	-8.5
Canister ID	3733	End pressure > "zero"?	Yes
Flow controller ID	2939	Sampling duration (intended)	4 hours
Associated ambient air sample ID	N/A	Depth of sample point below grade	2.5 - 3.0
Analytical method required	TO-15	Laboratory used	TestAmerica Burlington

Tubing type used: Teflon Length of tubing: 7ft ~~cm~~ Tubing volume: _____ cc

Volume purged: _____ cc @ 0.1 l/min (100cc/min) 1 to 3 volumes purged @ < 200cc/min? Yes

Chamber tracer gas conc.: 99.4 / 80.3 Tracer gas conc. during purging: 0 / 0 %

Gas Analyzer Readings: %O_2 N/A %CO_2 N/A %CH_4 N/A PID/FID reading: 0 / 0 (ppmv)

Noticeable odor: NO Soil type: _____

Weather Conditions during Probe Installation:

Air temperature (°F): _____ Rainfall: _____ Wind direction: _____

Barometric pressure: _____ Wind speed (mph): _____

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Weather Conditions at Start of Sampling:

Air temperature (°F): 73° Rainfall: None Wind direction: NW

Barometric pressure: 30.09 Wind speed (mph): 5.8

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

No

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments: Number 6736 scratched on canister

APPENDIX B

Analytical Laboratory Report

TestAmerica
South Burlington, VT

Sample Data Summary Package

SDG: 126770

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

August 12, 2008

TestAmerica Laboratories, Inc.

Mr. Leo Brausch
The North Bronson PRP Group
131 Wedgewood Drive
Gibsonia, PA 15044

Re: Laboratory Project No. 28000
Case: 28000; SDG: 126770

Dear Mr. Brausch:

Enclosed are the analytical results for the samples that were received by TestAmerica Burlington on July 28th, 2008. Laboratory identification numbers were assigned, and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 07/28/08 ETR No: 126770		
761418	SG-8	07/24/08	AIR
761419	SG-10	07/24/08	AIR
761420	SG-11	07/24/08	AIR
761421	SG-12	07/24/08	AIR
761422	SG-9	07/24/08	AIR
761423	DUP-2	07/24/08	AIR
761424	EB-2	07/24/08	AIR

Documentation of the condition of the samples at the time of their receipt and any exception to the laboratory's Sample Acceptance Policy is documented in the Sample Handling section of this submittal.

The volatile organics analyses for certain of the samples referenced above were accomplished at dilution based on screen analyses to ensure quantitation of all target constituents within the range of calibrated instrument response.

Any reference within this report to Severn Trent Laboratories, Inc. or STL, should be understood to refer to TestAmerica Laboratories, Inc. (formerly known as Severn Trent Laboratories, Inc.) The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the NELAC standard. Release of the data in this test report and any associated electronic deliverables is authorized by the Laboratory Director's designee as verified by the following signature.

30 Community Drive Suite 11 South Burlington, VT 05403 **tel** 802.660.1990 **fax** 802.660.1919 **www.testamericainc.com**

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

If there are any questions regarding this submittal, please contact me at 802 660-1990.

Sincerely,

Don Dawicki
Project Manager

Enclosure

TO-14/15
Result Summary

CLIENT SAMPLE NO.

SG-8

Lab Name: TAL Burlington

SDG Number: 126770

Lab Sample No.: 761418

Dilution Factor: 5.00

Date Analyzed: 7/31/2008

Sample Matrix: AIR

Date Received: 7/28/2008

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	1.0	U	1.0	2.6	U	2.6
trans-1,2-Dichloroethene	156-60-5	1.0	U	1.0	4.0	U	4.0
cis-1,2-Dichloroethene	156-59-2	1.0	U	1.0	4.0	U	4.0
Trichloroethene	79-01-6	170		1.0	910		5.4

TO-14/15
Result Summary

CLIENT SAMPLE NO.

SG-10

Lab Name: TAL Burlington

SDG Number: 126770

Lab Sample No.: 761419

Dilution Factor: 10.00

Date Analyzed: 7/31/2008

Sample Matrix: AIR

Date Received: 7/28/2008

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Viny Chloride	75-01-4	2.0	U	2.0	5.1	U	5.1
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	7.9	U	7.9
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	7.9	U	7.9
Trichloroethene	79-01-6	350		2.0	1900		11

TO-14/15
Result Summary

CLIENT SAMPLE NO.

SG-11

Lab Name: TAL Burlington

SDG Number: 126770

Lab Sample No.: 761420

Dilution Factor: 1.00

Date Analyzed: 7/31/2008

Sample Matrix: AIR

Date Received: 7/28/2008

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	0.20	U	0.20	0.51	U	0.51
trans-1,2-Dichloroethene	156-60-5	0.20	U	0.20	0.79	U	0.79
cis-1,2-Dichloroethene	156-59-2	0.20	U	0.20	0.79	U	0.79
Trichloroethene	79-01-6	12		0.20	64		1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

SG-12

Lab Name: TAL Burlington

SDG Number: 126770

Lab Sample No.: 761421

Dilution Factor: 10.00

Date Analyzed: 7/31/2008

Sample Matrix: AIR

Date Received: 7/28/2008

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	2.0	U	2.0	5.1	U	5.1
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	7.9	U	7.9
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	7.9	U	7.9
Trichloroethene	79-01-6	290		2.0	1600		11

TO-14/15
Result Summary

CLIENT SAMPLE NO.

SG-9

Lab Name: TAL Burlington

SDG Number: 126770

Lab Sample No.: 761422

Dilution Factor: 1.00

Date Analyzed: 8/1/2008

Sample Matrix: AIR

Date Received: 7/28/2008

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	0.41		0.20	1.0		0.51
trans-1,2-Dichloroethene	156-60-5	0.20	U	0.20	0.79	U	0.79
cis-1,2-Dichloroethene	156-59-2	0.79		0.20	3.1		0.79
Trichloroethene	79-01-6	0.91		0.20	4.9		1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

DUP-2

Lab Name: TAL Burlington

SDG Number: 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: 761423

Date Analyzed: 8/1/2008

Date Received: 7/28/2008

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	0.63		0.20	1.6		0.51
trans-1,2-Dichloroethene	156-60-5	0.20	U	0.20	0.79	U	0.79
cis-1,2-Dichloroethene	156-59-2	1.6		0.20	6.3		0.79
Trichloroethene	79-01-6	12		0.20	64		1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.
EB-2

Lab Name: TAL Burlington

SDG Number: 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: 761424

Date Analyzed: 8/1/2008

Date Received: 7/28/2008

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	0.20	U	0.20	0.51	U	0.51
trans-1,2-Dichloroethene	156-60-5	0.20	U	0.20	0.79	U	0.79
cis-1,2-Dichloroethene	156-59-2	0.20	U	0.20	0.79	U	0.79
Trichloroethene	79-01-6	0.20	U	0.20	1.1	U	1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

GA073108LCS

Lab Name: TAL Burlington

SDG Number: 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: GA073108

Date Analyzed: 7/31/2008

Date Received: / /

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	10		0.20	26		0.51
trans-1,2-Dichloroethene	156-60-5	11		0.20	44		0.79
cis-1,2-Dichloroethene	156-59-2	11		0.20	44		0.79
Trichloroethene	79-01-6	10		0.20	54		1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

GA073108LCSD

Lab Name: TAL Burlington

SDG Number: 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: GA073108

Date Analyzed: 7/31/2008

Date Received: / /

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	10		0.20	26		0.51
trans-1,2-Dichloroethene	156-60-5	11		0.20	44		0.79
cis-1,2-Dichloroethene	156-59-2	11		0.20	44		0.79
Trichloroethene	79-01-6	10		0.20	54		1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

GA080108LCS

Lab Name: TAL Burlington

SDG Number: 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: GA080108

Date Analyzed: 8/1/2008

Date Received: / /

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	10		0.20	26		0.51
trans-1,2-Dichloroethene	156-60-5	11		0.20	44		0.79
cis-1,2-Dichloroethene	156-59-2	11		0.20	44		0.79
Trichloroethene	79-01-6	10		0.20	54		1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

GA080108LCSD

Lab Name: TAL Burlington

SDG Number: 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: GA080108

Date Analyzed: 8/1/2008

Date Received: / /

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	9.5		0.20	24		0.51
trans-1,2-Dichloroethene	156-60-5	10		0.20	40		0.79
cis-1,2-Dichloroethene	156-59-2	10		0.20	40		0.79
Trichloroethene	79-01-6	9.6		0.20	52		1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

MBLK073108GA

Lab Name: TAL Burlington

SDG Number 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: MBLK0731

Date Analyzed: 7/31/2008

Date Received: / /

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	0.20	U	0.20	0.51	U	0.51
trans-1,2-Dichloroethene	156-60-5	0.20	U	0.20	0.79	U	0.79
cis-1,2-Dichloroethene	156-59-2	0.20	U	0.20	0.79	U	0.79
Trichloroethene	79-01-6	0.20	U	0.20	1.1	U	1.1

TO-14/15
Result Summary

CLIENT SAMPLE NO.

MBLK080108GA

Lab Name: TAL Burlington

SDG Number: 126770

Dilution Factor: 1.00

Sample Matrix: AIR

Lab Sample No.: MBLK0801

Date Analyzed: 8/1/2008

Date Received: / /

Target Compound	CAS Number	Results in ppbv	Q	RL in ppbv	Results in ug/m3	Q	RL in ug/m3
Vinyl Chloride	75-01-4	0.20	U	0.20	0.51	U	0.51
trans-1,2-Dichloroethene	156-60-5	0.20	U	0.20	0.79	U	0.79
cis-1,2-Dichloroethene	156-59-2	0.20	U	0.20	0.79	U	0.79
Trichloroethene	79-01-6	0.20	U	0.20	1.1	U	1.1

TestAmerica Burlington Data Qualifier Definitions

Organic

U: Compound analyzed but not detected at a concentration above the reporting limit.

J: Estimated value.

N: *Indicates presumptive evidence of a compound. This flag is used only for* tentatively identified compounds (TICs) where the identification of a compound is based on a mass spectral library search.

P: SW-846: *The relative percent difference for detected concentrations between two* GC columns is greater than 40%. Unless otherwise specified the higher of the two values is reported on the Form I.

CLP SOW: Greater than 25% difference for detected concentrations between two GC columns. Unless otherwise specified the lower of the two values is reported on the Form I.

C: *Pesticide result whose identification has been confirmed by GC/MS.*

B: Analyte is found in the sample and the associated method blank. The flag is used for tentatively identified compounds as well as positively identified compounds.

E: Compounds whose concentrations exceed the upper limit of the calibration range of the instrument for that specific analysis.

D: Concentrations identified from analysis of the sample at a secondary dilution.

A: *Tentatively identified compound is a suspected aldol condensation product.*

X,Y,Z: Laboratory defined flags that may be used alone or combined, as needed. If used, the description of the flag is defined in the project narrative.

Inorganic/Metals

E: Reported value is estimated due to the presence of interference.

N: Matrix spike sample recovery is not within control limits.

* *Duplicate sample analysis is not within control limits.*

B: The result reported is less than the reporting limit but greater than the instrument detection limit.

U: Analyte was analyzed for but not detected above the reporting limit.

Method Codes:

P	ICP-AES
MS	ICP-MS
CV	Cold Vapor AA
AS	Semi-Automated Spectrophotometric

) Community Drive
ilte 11
outh Burlington, VT 05403
hone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information		Project Manager: Cliff Yantz	Samples Collected By: Kevin Schneider / Cliff Yantz	1 of 2 COCs
Company: O'Brien & Gere		Phone: 248-477-5701		
Address: 37000 Grand River		Email: YantzCS@OBG.com		
City/State/Zip: Farmington Hills, MI 48335				
Phone: 248-477-5701		Site Contact: Cliff Yantz		
FAX: 248-477-5962		STL Contact: Don Dawicki		
Project Name: Vapor Intrusion investigation		Analysis Turnaround Time		
Site: NBIA out Bronson, MI		Standard (Specify) X		
PO # 41686		Rush (Specify)		

(Probe Depth FBG)

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type: Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SG-8 / 2.8 - 3.3	7/24/08	7:55	12:05	-30.0	-9.5	2839	4802	X										
SG-10 / 2.5 - 3.0	7/24/08	9:30	13:30	-27.5	-3	3448	5290	X										
SG-11 / 2.5 - 3.0	7/24/08	10:03	14:03	-30.0	-4	3046	3341	X										
SG-12 / 2.5 - 3.0	7/24/08	10:30	14:30	-28	-8.5	2939	3733	X										
SG-9 / 2.5 - 3.0	7/24/08	12:00	16:45	-29.8	-13	3707	3275	X										
Dup-2	7/24/08	—	—	-28.5	-6.5	4722	3028	X										

Temperature (Fahrenheit)	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments:

Samples Shipped by: OBG	Date/Time: 7/25/08 11:00	Samples Received by: 7/28/08 0845	FEDEX AirBill # 798985690901
Samples Relinquished by:	Date/Time:	Received by:	
Relinquished by:	Date/Time:	Received by:	

Custody Seal No.	Cooler Temp.	Received in Laboratory by:	Condition

Community Drive
Suite 11
South Burlington, VT 05403
Phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: SAME AS PAGE 1	Samples Collected By: Kevin Schneider / Cliff Yantz	2 of 2 COCs
Company:	Phone:		
Address: SEE PAGE 1 (SAME)	Email:		
City/State/Zip	Site Contact:		
Phone:	STL Contact:		
FAX:			
Project Name:	**Analysis Turnaround Time**		
Site:	Standard (Specify) X		
PO #	Rush (Specify)		

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum In Field, "Hg (Start)	Canister Vacuum In Field, "Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	Sample Type	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
EB-2	7/24/08	—	—	-29.3	-29.3	N/A	4357	X											

Temperature (Fahrenheit)		
	Interior	Ambient
Start		
Stop		

Pressure (inches of Hg)		
	Interior	Ambient
Start		
Stop		

Special Instructions/QC Requirements & Comments:

Samples Shipped by: [signature] OBG	Date/Time: 7/25/08 11:00	Samples Received by: [signature] 07/28/08 0845	FEDEX AirBill # 798985690901
Samples Relinquished by:	Date/Time:	Received by:	
Relinquished by:	Date/Time:	Received by:	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Data Summary – TO-15 Volatile

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

NBPRP SAMPLE NO.

DUP-2

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: 761423

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: 761423

Level: (low/med) LOW Date Received: 07/28/08

% Moisture: not dec. _____ Date Analyzed: 08/01/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	0.63	
156-60-5	trans-1,2-Dichloroethene	0.20	U
156-59-2	cis-1,2-Dichloroethene	1.6	
79-01-6	Trichloroethene	12	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

NBPRP SAMPLE NO.

EB-2

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: 761424

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: 761424I2

Level: (low/med) LOW Date Received: 07/28/08

% Moisture: not dec. _____ Date Analyzed: 08/01/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	U
79-01-6	Trichloroethene	0.20	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

NBPRP SAMPLE NO.

SG-10

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: 761419

Sample wt/vol: 20.00 (g/mL) ML Lab File ID: 761419D

Level: (low/med) LOW Date Received: 07/28/08

% Moisture: not dec. _____ Date Analyzed: 07/31/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	2.0	U
156-60-5	trans-1,2-Dichloroethene	2.0	U
156-59-2	cis-1,2-Dichloroethene	2.0	U
79-01-6	Trichloroethene	350	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

NBPRP SAMPLE NO.

SG-11

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: 761420

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: 761420

Level: (low/med) LOW Date Received: 07/28/08

% Moisture: not dec. _____ Date Analyzed: 07/31/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	U
79-01-6	Trichloroethene	12	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

NBPRP SAMPLE NO.

SG-12

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: 761421

Sample wt/vol: 20.00 (g/mL) ML Lab File ID: 761421D

Level: (low/med) LOW Date Received: 07/28/08

% Moisture: not dec. _____ Date Analyzed: 07/31/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 10.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	2.0	U
156-60-5	trans-1,2-Dichloroethene	2.0	U
156-59-2	cis-1,2-Dichloroethene	2.0	U
79-01-6	Trichloroethene	290	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

NBPRP SAMPLE NO.

SG-8

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: 761418

Sample wt/vol: 40.00 (g/mL) ML Lab File ID: 761418D

Level: (low/med) LOW Date Received: 07/28/08

% Moisture: not dec. _____ Date Analyzed: 07/31/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 5.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	1.0	U
156-60-5	trans-1,2-Dichloroethene	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
79-01-6	Trichloroethene	170	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

NBPRP SAMPLE NO.

SG-9

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: 761422

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: 761422

Level: (low/med) LOW Date Received: 07/28/08

% Moisture: not dec. _____ Date Analyzed: 08/01/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	0.41	
156-60-5	trans-1,2-Dichloroethene	0.20	U
156-59-2	cis-1,2-Dichloroethene	0.79	
79-01-6	Trichloroethene	0.91	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MBLK073108GA

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: MBLK073108GA

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: GCNB01P

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/31/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	U
79-01-6	Trichloroethene	0.20	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MBLK080108GA

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: MBLK080108GA

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: GCNB01Q

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	0.20	U
156-60-5	trans-1,2-Dichloroethene	0.20	U
156-59-2	cis-1,2-Dichloroethene	0.20	U
79-01-6	Trichloroethene	0.20	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GA073108LCS

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: GA073108LCS

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: GCN10PQ

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/31/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	10	
156-60-5	trans-1,2-Dichloroethene	11	
156-59-2	cis-1,2-Dichloroethene	11	
79-01-6	Trichloroethene	10	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GA073108LCSD

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: GA073108LCSD

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: GCN10PQD

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/31/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	10	
156-60-5	trans-1,2-Dichloroethene	11	
156-59-2	cis-1,2-Dichloroethene	11	
79-01-6	Trichloroethene	10	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GA080108LCS

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: GA080108LCS

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: GCN10QQ

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	10	
156-60-5	trans-1,2-Dichloroethene	11	
156-59-2	cis-1,2-Dichloroethene	11	
79-01-6	Trichloroethene	10	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GA080108LCSD

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix: (soil/water) AIR Lab Sample ID: GA080108LCSD

Sample wt/vol: 200.0 (g/mL) ML Lab File ID: GCN10QQD

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 08/01/08

GC Column: RTX-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) PPBV	Q
75-01-4	Vinyl Chloride	9.5	
156-60-5	trans-1,2-Dichloroethene	10	
156-59-2	cis-1,2-Dichloroethene	10	
79-01-6	Trichloroethene	9.6	

FORM 3
AIR VOLATILE LAB CONTROL SAMPLE

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix Spike - Sample No.: GA073108LCS

COMPOUND	SPIKE ADDED (ppbv)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ppbv)	LCS % REC #	QC. LIMITS REC.
Vinyl Chloride	10		10	100	70-130
trans-1,2-Dichloroethen	10		11	110	70-130
cis-1,2-Dichloroethene	10		11	110	70-130
Trichloroethene	10		10	100	70-130

COMPOUND	SPIKE ADDED (ppbv)	LCSD CONCENTRATION (ppbv)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Vinyl Chloride	10	10	100	0	25	70-130
trans-1,2-Dichloroethen	10	11	110	0	25	70-130
cis-1,2-Dichloroethene	10	11	110	0	25	70-130
Trichloroethene	10	10	100	0	25	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 4 outside limits
Spike Recovery: 0 out of 8 outside limits

COMMENTS: _____

FORM 3
AIR VOLATILE LAB CONTROL SAMPLE

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Matrix Spike - Sample No.: GA080108LCS

COMPOUND	SPIKE ADDED (ppbv)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ppbv)	LCS % REC #	QC. LIMITS REC.
Vinyl Chloride	10		10	100	70-130
trans-1,2-Dichloroethen	10		11	110	70-130
cis-1,2-Dichloroethene	10		11	110	70-130
Trichloroethene	10		10	100	70-130

COMPOUND	SPIKE ADDED (ppbv)	LCSD CONCENTRATION (ppbv)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Vinyl Chloride	10	9.5	95	5	25	70-130
trans-1,2-Dichloroethen	10	10	100	10	25	70-130
cis-1,2-Dichloroethene	10	10	100	10	25	70-130
Trichloroethene	10	9.6	96	4	25	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 4 outside limits
Spike Recovery: 0 out of 8 outside limits

COMMENTS: _____

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MBLK073108GA

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Lab File ID: GCNB01P Lab Sample ID: MBLK073108GA

Date Analyzed: 07/31/08 Time Analyzed: 1257

GC Column: RTX-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: G

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	GA073108LCS	GA073108LCS	GCN10PQ	1116
02	GA073108LCSD	GA073108LCSD	GCN10PQD	1207
03	SG-8	761418	761418D	2123
04	SG-10	761419	761419D	2213
05	SG-11	761420	761420	2304
06	SG-12	761421	761421D	2355
07	SG-9	761422	761422	0045
08	DUP-2	761423	761423	0136
09				
10				
11				
12				
13				
14				
15				
16				
17				
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19				
20				
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30				

COMMENTS:

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

MBLK080108GA

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Lab File ID: GCNB01Q Lab Sample ID: MBLK080108GA

Date Analyzed: 08/01/08 Time Analyzed: 1339

GC Column: RTX-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: G

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	GA080108LCS	GA080108LCS	GCN10QQ	1158
02	GA080108LCSD	GA080108LCSD	GCN10QQD	1248
03	EB-2	761424	761424I2	1702
04				
05				
06				
07				
08				
09				
10				
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30				

COMMENTS:

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Lab File ID: GCN01PV BFB Injection Date: 07/16/08

Instrument ID: G BFB Injection Time: 0801

GC Column: RTX-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	21.6
75	30.0 - 66.0% of mass 95	50.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	50.0 - 120.0% of mass 95	85.3
175	4.0 - 9.0% of mass 174	6.0 (7.0)1
176	93.0 - 101.0% of mass 174	83.4 (97.8)1
177	5.0 - 9.0% of mass 176	5.3 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ASTD0002	ASTD0002	GCN002V	07/16/08	0942
02	ASTD0005	ASTD0005	GCN005V	07/16/08	1032
03	ASTD005	ASTD005	GCN05V	07/16/08	1122
04	ASTD010	ASTD010	GCN10V	07/16/08	1212
05	ASTD020	ASTD020	GCN20V	07/16/08	1354
06	ASTD015	ASTD015	GCN15V2	07/16/08	1445
07	ASTD040	ASTD040	GCN40V	07/16/08	1535
08					
09					
10					
11					
12					
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21					
22					

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Lab File ID: GCN18PV BFB Injection Date: 07/31/08

Instrument ID: G BFB Injection Time: 0827

GC Column: RTX-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	20.9
75	30.0 - 66.0% of mass 95	50.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	50.0 - 120.0% of mass 95	86.2
175	4.0 - 9.0% of mass 174	5.9 (6.9)1
176	93.0 - 101.0% of mass 174	83.7 (97.1)1
177	5.0 - 9.0% of mass 176	5.4 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ASTD010	ASTD010	GCN10PV2	07/31/08	1016
02	GA073108LCS	GA073108LCS	GCN10PQ	07/31/08	1116
03	GA073108LCSD	GA073108LCSD	GCN10PQD	07/31/08	1207
04	MBLK073108GA	MBLK073108GA	GCNB01P	07/31/08	1257
05	SG-8	761418	761418D	07/31/08	2123
06	SG-10	761419	761419D	07/31/08	2213
07	SG-11	761420	761420	07/31/08	2304
08	SG-12	761421	761421D	07/31/08	2355
09	SG-9	761422	761422	08/01/08	0045
10	DUP-2	761423	761423	08/01/08	0136
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Lab File ID: GCN19PV BFB Injection Date: 08/01/08

Instrument ID: G BFB Injection Time: 0919

GC Column: RTX-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	23.2
75	30.0 - 66.0% of mass 95	52.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	50.0 - 120.0% of mass 95	83.0
175	4.0 - 9.0% of mass 174	5.7 (6.9)1
176	93.0 - 101.0% of mass 174	80.8 (97.3)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ASTD010	ASTD010	GCN10QV2	08/01/08	1101
02	GA080108LCS	GA080108LCS	GCN10QQ	08/01/08	1158
03	GA080108LCSD	GA080108LCSD	GCN10QQD	08/01/08	1248
04	MBLK080108GA	MBLK080108GA	GCNB01Q	08/01/08	1339
05	EB-2	761424	761424I2	08/01/08	1702
06					
07					
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Instrument ID: G Calibration Date(s): 07/16/08 07/16/08

Heated Purge: (Y/N) N Calibration Time(s): 0942 1535

GC Column: RTX-624 ID: 0.32 (mm)

LAB FILE ID: RRF0.2=GCN002V RRF0.5=GCN005V
RRF2 = RRF5 =GCN05V RRF10 =GCN10V

COMPOUND	RRF0.2	RRF0.5	RRF2	RRF5	RRF10	$\overline{RRF}$	%RSD
Vinyl Chloride		1.636		1.521	1.420		
trans-1,2-Dichloroethene	2.123	2.162		2.059	2.008		
cis-1,2-Dichloroethene	1.323	1.412		1.306	1.313		
Trichloroethene	0.358	0.359		0.348	0.348		

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Instrument ID: G Calibration Date(s): 07/16/08 07/16/08

Heated Purge: (Y/N) N Calibration Time(s): 0942 1535

GC Column: RTX-624 ID: 0.32 (mm)

LAB FILE ID: RRF15 =GCN15V2 RRF20 =GCN20V
RRF40 =GCN40V

COMPOUND	RRF15	RRF20	RRF40			$\overline{RRF}$	% RSD
Vinyl Chloride		1.400	1.327			1.461	8.2
trans-1,2-Dichloroethene		2.029	2.014			2.066	3.1
cis-1,2-Dichloroethene		1.346	1.351			1.342	2.9
Trichloroethene		0.391	0.413			0.370	7.1

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Instrument ID: G Calibration Date: 07/31/08 Time: 1016

Lab File ID: GCN10PV2 Init. Calib. Date(s): 07/16/08 07/16/08

Heated Purge: (Y/N) N Init. Calib. Times: 0942 1535

GC Column: RTX-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	%D	MAX %D
Vinyl Chloride	1.461	1.396	0.01	4.4	30.0
trans-1,2-Dichloroethene	2.066	2.176	0.01	5.3	30.0
cis-1,2-Dichloroethene	1.342	1.370	0.01	2.1	30.0
Trichloroethene	0.370	0.366	0.01	1.1	30.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Instrument ID: G Calibration Date: 08/01/08 Time: 1101

Lab File ID: GCN10QV2 Init. Calib. Date(s): 07/16/08 07/16/08

Heated Purge: (Y/N) N Init. Calib. Times: 0942 1535

GC Column: RTX-624 ID: 0.32 (mm)

COMPOUND	$\overline{RRF}$	RRF10	MIN RRF	%D	MAX %D
Vinyl Chloride	1.461	1.442	0.01	1.3	30.0
trans-1,2-Dichloroethene	2.066	2.221	0.01	7.5	30.0
cis-1,2-Dichloroethene	1.342	1.395	0.01	3.9	30.0
Trichloroethene	0.370	0.375	0.01	1.4	30.0

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Lab File ID (Standard): GCN10PV2 Date Analyzed: 07/31/08

Instrument ID: G Time Analyzed: 1016

GC Column: RTX-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	391137	8.83	2025653	9.57	2028008	11.83
	UPPER LIMIT	547592	9.16	2835914	9.90	2839211	12.16
	LOWER LIMIT	234682	8.50	1215392	9.24	1216805	11.50
	CLIENT SAMPLE NO.						
01	GA073108LCS	413540	8.83	2073487	9.57	2004345	11.82
02	GA073108LCSD	413948	8.83	2097816	9.57	2048527	11.83
03	MBLK073108GA	380659	8.83	1953500	9.57	1697836	11.83
04	SG-8	295284	8.83	1549000	9.57	1502262	11.83
05	SG-10	290838	8.83	1539174	9.57	1500627	11.83
06	SG-11	281572	8.83	1500863	9.57	1433749	11.83
07	SG-12	280468	8.83	1477178	9.57	1376575	11.82
08	SG-9	273706	8.83	1424465	9.57	1384779	11.83
09	DUP-2	287888	8.83	1514153	9.57	1470497	11.83
10							
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12							
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20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 40% of internal standard area
AREA LOWER LIMIT = - 40% of internal standard area
RT UPPER LIMIT = + 0.33 minutes of internal standard RT
RT LOWER LIMIT = - 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: TESTAMERICA BURLINGTON Contract: 28000

Lab Code: STLV Case No.: 28000 SAS No.: SDG No.: 126770

Lab File ID (Standard): GCN10QV2 Date Analyzed: 08/01/08

Instrument ID: G Time Analyzed: 1101

GC Column: RTX-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	377687	8.83	1917023	9.57	1894162	11.83
	UPPER LIMIT	528762	9.16	2683832	9.90	2651827	12.16
	LOWER LIMIT	226612	8.50	1150214	9.24	1136497	11.50
	CLIENT SAMPLE NO.						
01	GA080108LCS	399276	8.83	2055606	9.57	2017750	11.83
02	GA080108LCSD	408866	8.83	2100241	9.57	2064300	11.83
03	MBLK080108GA	344852	8.83	1900906	9.57	1683137	11.83
04	EB-2	267128	8.83	1414504	9.57	1287416	11.83
05							
06							
07							
08							
09							
10							
11							
12							
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14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 40% of internal standard area
AREA LOWER LIMIT = - 40% of internal standard area
RT UPPER LIMIT = + 0.33 minutes of internal standard RT
RT LOWER LIMIT = - 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

APPENDIX C

Data Validation Report

To: Cliff Yantz *cc:*
From: KA Storne
Re: Review of Data for the NBIA Site, VI Study
Sampling Performed July 2008
File: 12716/41686.002.001
Date: September 15, 2008

This memorandum provides the data validation results for the soil vapor samples collected for the NBIA Site in Michigan. O'Brien & Gere conducted sample collection activities in July 2008.

The following table summarizes the analysis performed for this sampling event.

Table 1-1. *Analytical methods and references*

Parameter	Method	Reference
VOCs	USEPA Method TO-15	1

Note:
1. United States Environmental Protection Agency. 1999. *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air.* Cincinnati, Ohio.

VOCs indicates volatile organic compounds.

TestAmerica Laboratories, Inc. Burlington (TAL-Burlington) of South Burlington, Vermont performed the analyses for this sampling event.

The laboratory packages generated by TAL-Burlington contained quality control analysis and supportive raw data.

Full validation was performed on the samples collected for this sampling event.

The analytical data generated for this investigation were evaluated by O'Brien & Gere using the quality assurance/quality control (QA/QC) information presented in the following documents:

- O'Brien & Gere. 2007. *Vapor Intrusion Work Plan, North Bronson Industrial Area, Operable Unit 1, Bronson, Michigan.* Farmington Hills, Michigan.
- United States Environmental Protection Agency. 1999. *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air.* Cincinnati, Ohio.

Data affected by excursions from the previously mentioned QA/QC criteria were qualified using the following USEPA data validation guidance and professional judgment:

- United States Environmental Protection Agency (USEPA). 2006. *Validating Volatile Organic Analysis of Ambient Air in canister by Method TO-15. SOP HW-31, Revision 4.* Albany, New York

USEPA data validation guidelines have been modified to reflect the requirements of the method used in the analysis of samples collected for this sampling event. Qualifiers were applied to data that failed to meet the quality control criteria presented in the USEPA method.

The validation included checking the following parameters:

- Work plan compliance
- Chain-of-custody records
- Sample collection
- Holding times
- Calibrations
- Blank analysis
- Laboratory control sample (LCS) analysis
- Field duplicate analysis
- Internal standards performance
- Gas chromatography/mass spectrometry (GC/MS) instrument performance check
- Target analyte quantitation, identification, and QLs
- Documentation completeness.

The samples that were submitted for data validation are listed in Table 1-2.

The following sections of this memorandum present the results of the comparison of the analytical data to the QA/QC criteria specified above. Based on the QA/QC information review, an overall evaluation of data usability is also presented in the final section.

VALIDATION APPROACH

The following approach is used to evaluate calibration data for USEPA Method TO-15:

- VOC target analytes are evaluated using the criteria of 30 percent relative standard deviation (%RSD) or correlation coefficient criteria of 0.990 for initial calibration curves.

- Calibration verifications were evaluated using a criterion of 30 percent difference (%D) for target analytes.

Data are qualified using the following approach for evaluation of quality control data in this type of validation:

- Laboratory established control limits are used to assess LCS and laboratory duplicate data.
- If percent recoveries are less than laboratory control limits but greater than ten percent, non-detected and detected results are qualified as approximate (UJ, J) to indicate minor excursions.
- If percent recoveries are greater than laboratory control limits, detected results are qualified as approximate (J) to indicate minor excursions. Non-detected results are not qualified.
- If percent recoveries are less than ten percent, detected results are qualified as approximate (J) and non-detected results are qualified as rejected (R) to indicate major excursions.
- If RPDs for field duplicates are outside of validation criteria, detected and non-detected results are qualified as approximate (UJ, J).

- Field duplicate data are evaluated against relative percent difference (RPD) criteria of less than 25 percent for samples when results were greater than five times the QL. When sample results for field duplicate pairs were less than five times the QL, the data were evaluated using control limits of plus or minus two times the QL, referred to as a difference evaluation.

- For blank evaluation, if target analytes are detected in the sample at a concentration that is less than five times the concentration detected in the associated blank, the sample result is qualified as "U".
- Internal standard recoveries are evaluated using control limits of within 40% of the associated calibration verification standard. The results for target analytes associated with internal standard area recoveries 25% or greater but less than the lower standard area are qualified as approximate (J, UJ) to indicate minor internal standard recovery excursions. The non-detected results for target analytes associated with internal standard area recoveries less than 25% are rejected (R) to indicate major recovery excursions.

The cumulative effect of the various QA/QC excursions is employed in assigning the final data qualifiers. For example, if a sample result is affected by low LCS recovery for which the "J" qualifier is applied, but severely low internal standard recoveries result in the rejection of the sample result (R), the final qualifier is "R".

VOLATILE ORGANIC COMPOUND IN AIR DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet method and validation criteria or did not result in additional qualification of sample results:

- Work plan compliance
- Chain-of-custody records
- Sample collection
- Holding times
- Calibrations
- Blank analysis
- LCS analysis
- Internal standards performance
- GC/MS instrument performance check
- Target analyte identification
- Documentation completeness.

Excursions from method or validation criteria detected during the validation process and additional observations are described in the following section.

I. Field duplicate analysis

Field duplicate results were within the validation criteria with the following exceptions: the results for vinyl chloride and cis-1,2-dichloroethene in the duplicate pair DUP-2 [SG-11/2.5-3.0] and SG-11/2.5-3.0 were qualified as approximate (UJ, J) due to minor field duplicate difference excursions.

II. Target analyte quantitation and QLs.

Due to elevated concentrations of trichloroethene, dilutions were performed for the following samples: SG-8/2.8-3.3, SG-10/2.5-3.0, and SG-12/2.5-3.0. Only the diluted results were reported for these samples.

Sample results were reported to the QL.

DATA USABILITY

Overall data usability with respect to completeness for the final sample results reported is 100 percent for the VOC air data. Based on the validation performed, the Work Plan completeness goal of 95 percent was met for these analyses.

Table 1-2. Sample cross reference list

Samples collected and submitted for data validation

Laboratory Name	Laboratory SDG	Laboratory Identification	Client Identification	Date Collected	Matrix	Analysis Requested
Test America Burlington	126770	761418	SG-8/2.8-3.3	7/24/2008	Soil Gas	VOCs
Test America Burlington	126770	761419	SG-9/2.5-3.0	7/24/2008	Soil Gas	VOCs
Test America Burlington	126770	761420	SG-10/2.5-3.0	7/24/2008	Soil Gas	VOCs
Test America Burlington	126770	761421	SG-11/2.5-3.0	7/24/2008	Soil Gas	VOCs
Test America Burlington	126770	761422	SG-12/2.5-3.0	7/24/2008	Soil Gas	VOCs
Test America Burlington	126770	761423	DUP-2 [SG-11/2.5-3.0]	7/24/2008	Soil Gas	VOCs
Test America Burlington	126770	761424	EB-2	7/24/2008	Soil Gas	VOCs

Note

SDG indicates sample delivery group.

VOCs indicates volatile organic compounds.